Quality of Internal Risk Rating Frameworks at Commercial Banks in Pakistan

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2012

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Abstract

The importance of internal risk rating system for an effective credit risk management system can not be overemphasized. The system demands contunuous support and involement of top management of the commercial banks, and the regulators. The attempt to develop robust internal risk rating systems is ongoing among commercial banks. This study was made to measure the quality of internal credit risk rating systems of commercial banks in Pakistan in terms of the various aspects of an internal rating system.

To achieve this objective interviews of head of risk manageent of 10 commercial banks operating in Paistan were conducted. The unstructured questions used in the interviews were transcribed and the technique of content analysis was used. The findings revealed that internal risk rating systems of commercial banks in Pakistan are generally strong but need improvement in a few aspects. The following areas of internal risk rating systems of commercial banks in Pakistan were found weak:

1. Environment specific to internal risk rating methodologies employed by the banks.
2. Environment specific to the documentation in the internal risk rating system.

Other areas such as credit grades, use of qualitative and quantitative factors, methodology, internal risk rating policy, external credit rating, rating definitions, rating criteria, boards involvement were found in lines with the internal risk rating guidelines issued by the SBP.

Key Words: Credit Risk, Credit Risk Management, Internal Risk Rating

Chapter 1 Introduction

1.1 Introduction to the Study

The title quality of internal risk rating framework at commercial banks in Pakistan is one having high significance for the banking sector in Pakistan. This study is initiated at a time when commercial banks are gearing strongly to face the challenges of this modern financial era. The complexity, integration and the competitiveness of the financial markets have made it very necessary for financial institutes and particularly commercial banks to manage their risks effectively (Caouette et al., 2008, p.13). This study is about one of the most important area in credit risk management which all of commercial banks are engaged into with firm commitment. As the next chapter will explore more into it the internal rating system of a bank allow it to find the credit risk inherent with each and every potential borrower. The system is very beneficial to banks, needless to say; moreover the state bank of Pakistan has made it a requirement for every commercial bank to maintain an internal rating system of a prescribed profile.

This study has been organized into six chapters such as: Introduction to the study, Introduction to the Internal Risk Rating systems, literature review, research methodology, content analysis and findings and conclusion.

The chapter *introduction to credit risk* deals with the environment and significance of internal risk rating systems for commercial banks. The chapter is organized to first build the relationship between credit risk, credit risk management and internal risk rating system. The remaining section of the study discusses functions, expectations, developments and automation in the subject matter of this study.

The third chapter *Literature review* deals with the discussion of the perspective of renowned researchers in the area of internal risk rating framework practices. The chapter is divided into areas such as benefits of *Internal Rating System, Quantitative and Qualitative Factors, rating models, Design of Internal Risk Rating , external and internal ratings, Basel Regulations and Internal Risk Rating System, internal risk rating guidelines*.

The description of internal risk rating best practices is based on the internal risk rating guidelines issued by the state bank of Pakistan. The interpretation of the guidelines was very important, as it allowed the researcher to determine the nature of the benchmark internal credit risk rating framework and develop the interview questions accordingly.

The fourth chapter, mentioned as, research methodology, is about sampling plan and the research techniques used in this study.

The fifth chapter, named as data collection and analysis, is separated into three parts. The first part is a tabular presentation of data developed from the content analysis of the interviews made with the heads of credit risk management. The second part is analysis of the data contained in the tables. The third part, that is, findings, is composed of information derived from the analysis of each individual table.

The final section of the study is the conclusion. The conclusion is derived from the output of the content analysis combined with the insights developed from the review of the literature. The main conclusion of the study was that internal risk rating framework of commercial banks in

Pakistan was generally good but needed improvement in certain areas such as credit culture, credit monitoring, limit setting and credit risk modeling.

1.2 Problem Statement

The importance of internal risk rating system for an effective credit risk management system can not be overemphasized. The system demands contunuous support and involement of top management of the commercial banks, and the regulators. The attempt to develop robust internal risk rating systems is ongoing among commercial banks. The commercial realize the coplexity in the modern financial environment exposing them to even greater credit risk than before. Also, establishing and maintaining an effective internal risk rating system is an uphill task in Pakistan because of the lack of adequate default and and recovery data.

1.3 Objective of the Study

To measure the quality of internal credit risk rating systems of commercial banks in Pakistan in terms of the following aspects of an internal rating system:

Credit grades, credit rating criteria, rating methodology, rating definitions, use of external ratings, doocumentaion, reporting, use of quantitative and qualitative data and boards involvement.

1.4 **Type of study**

This is a qualitative study made to evaluate the quality of internal credit rating systems of conventional commercial banks. The quality of internal risk rating environment is measured in terms of the specific set of guidelines issued by the state bank of Pakistan in 2008. The instrument of in-depth interview was employed to gather data necessary to meet the aims of this paper.

1.5 Scope and Limitation of the Study

The internal credit risk rating systems are established to grade a number of banking loans including consumer, commercial and running finance loans. This study focuses on only the commercial loans. Moreover, the research preview includes only conventional commercial banks and ignores other financial institutes and Islamic banks. For the purpose of this research the set of internal risk ratings guidelines issued by the state bank of Pakistan have been assumed as the best practices in the area of internal risk rating.

Chapter 2 Introduction to the Topic

Most of the financial institutes today, and particularly commercial banks, maintain an internal risk rating system to grade the credit quality of their customers. This is not an easy task rather requires full commitment from the top management: commitment of physical and human resources. The framework is an important input of credit risk management process as it allows the bank to individually assess the credit risk of their customers. All financial intermediaries face credit risk to varying degree of extent. Commercial banks, because of the nature of their products, face credit risk at a higher level than is the case with other financial intermediaries (Saunders & Cornett, p.173). Commercial banks, needless to say, are encouraged to sustain highly effective systems to offset credit risk. This should be done by establishing and maintaining an effective credit risk management system. Establishing an effective internal risk rating system is a step in this regard; as, an internal rating system allows commercial banks to measure and mitigate credit risks they are exposed to in their lending activities by aggregating and managing the credit quality of the obligors (Bank of Japan 2005). Regulations governing commercial banks have long appreciated the importance of credit risk management for commercial banks which prompt them to monitor and regulate them very strictly.

2.1 Credit Risk

Credit risk is uncertainty associated with non-payment of a monetary obligation. There are three types of credit risks such as default risk, down-grade risk and credit spread risk (Bessis, 2006, p.13). Default risk is related to actual non-payment of obligation. Down-grade risk is the probability that the credit rating will down-grade the issue or the firm. Credit spread risk is associated with the probability that credit spread of the issue will decrease. To measure credit risk effectively an active trading market should exists. As no active trading markets are available for commercial loans generally and even so in Pakistan, the default risk becomes the most relevant type of credit risk facing commercial banks in Pakistan.

2.2 Credit Risk Management

As mentioned above credit risk management is an essential component of the overall risk management system of commercial banks. Credit risk management deals with identification, measurement and mitigation of credit risk (Shimko and Went, 2010, p.40). It is at the second step, measurement of credit risk, that internal risk rating system plays its part. It amounts to having the ability and capacity to accurately risk rate each and every individual transaction and customer. This was not practiced before as commercial banks were either relying on the data received from the customer or using the risk rating of an external agency.

Basel II regulations deals extensively with credit risk and prescribe good practices for financial institutes to measure credit risk. The methodologies prescribed in the Basel II regulations are termed as standardized approach and Internal Rating Based approach (IRB) (Apostolik, et al, 2009, p.140-141). The regulations suggest the standardized approach for new banks and require them to move forward towards the IRB approach. The essence of IRB approach is the existence of a system allowing the banks to risk rate the borrowers by themselves. The internal rating system then becomes the hallmark of the credit risk management system of the bank and allows the bank to measure, price and manage credit risk of emanating from the individual customers and the portfolio very effectively. Realizing the importance of internal risk rating the state bank of Pakistan (SBP) issued a directive in 2008 in this respect. The directive asks the commercial banks to establish and maintain an internal risk rating system to rate their borrowers. For commercial banks to effectively manage it the state bank of Pakistan also released the internal risk rating guidelines in 2008. The guidelines prescribe various aspects and procedures within the internal risk rating systems of commercial banks. The guidelines focuses on the areas such as credit grades, rating criteria, policy, architecture, rating methodologies and design, external ratings, organizational structure and others. It is believed that the commercial banks need to significantly adjust the level of computational and human resources to comply with the expectations mentioned in the guidelines.

As mentioned above the implementation of internal risk rating in Pakistan is already underway. The financial system, the regulator (SBP) and also the banks have realized the importance of internal rating system. But the effectiveness of the system require full commitment from the top management in terms of adhering to the essential principles of maintain the internal rating system. In other countries the effectiveness of the system has, at times, been compromised because of the issues such as lack of data (Servigny & Renault, 2004, p.48), inappropriate modeling and lack of trained staff. The state bank of Pakistan has issued guidelines to support the commercial banks to maintain an effective internal risk rating system. The guidelines are comprehensive, detailed and at times flexible.

2.3 Internal Risk Rating

Credit risk is the most important exposure a financial risk faces in all of its business dealings. Also, the style in which a bank measure and mitigates its credit exposures is extremely important for its success. The erosion of equity through bad loans has seen many commercial banks collapse over a period of time. Establishing and maintaining an effective internal risk rating framework is the most important factor in managing the loan losses to the desired level.

Internal risk rating system is the framework which allows a commercial bank to rate their customers in terms of their creditworthiness. The bank employs a rigorous process, starting with the initiation of the loan application, to classify the transaction into a specific risk grade (Bessis, 2006, p.445). The grades are generally alphabetically named, such as (BBB, BB, B) or numbered, such as (1-9) to quantitatively express credit risk.

In the words of Krahnen and Weber (2000) internal ratings is needed to support measurement of credit risk, to effectively deal with the portfolio and to price the debts of the company. This would only be meaningful if the internal ratings system employ strong controls and is characterized by good practices. In a word with complex financial markets and transactions the role of various external monitors is linked; auditors deal with the risk reporting systems of a company, rating agencies analyze the risk measurement system of a prospective issuer. The supervisory authorities, too, have started taking interest in the certification of various relevant systems and models.

The system requires the bank to assess the credit risk of the transaction in terms of variety of quantitative and qualitative factors. In the words of Sarac (2010) using specific criteria the internal risk rating process produces credit score for each and every obligor. Then the scores are aggregated in classes formed within a range of credit score interval. Each class is given a grade. No single risk rating system is perfect in all conditions. Actually, the risk rating framework is a function of the sophistication of the bank's business activities. Large banks generally require comprehensive rating systems with multiple grading to account for the complex level of credit exposure arising from a wider product and customer base. The smaller banks need not be having a very sophisticated rating system as the quality and depth of their interaction with their customers allow them to incorporate more enhanced level of qualitative information in the credit assessment process.

2.3.1 Functions of a Credit Risk Rating System

A well-management internal risk rating system promotes soundness and safety of the financial institution. It produces categorization of individual loans into different risk categories (Sauders & Allen, 2010, p.299). This requires a commercial bank to maintain a system to individually measure the credit risk of each loan. The result is that commercial banks and the regulators can be better aware of the changes in the credit risk and overall risk faced by the bank with the facilitation of every new loan.

Internal credit risk ratings are very important for other critical functions as well. Some of these functions are: credit approval, credit pricing, credit relationship, credit administration and portfolio management information systems, and board reporting and portfolio management.

2.3.2 Expectations of Bank Credit Risk Rating Systems

One unique internal credit risk rating system can be considered as ideal for every situation. The qualities narrated below should be the hallmark in every risk rating system, but banks can have their own formula to merge those qualities to develop a process.

Following qualities are generally the part and parcel of risk rating systems:

The rating system should work in the integrated environment, promote measuring, monitoring, and communicating of credit risk, and provide important inputs to the strategic decision making framework of the bank. Duly approved by the board the risk rating system should work in an integrated environment. That way it will promote credit monitoring, measurement and reporting. The best of all it will support the board decision making. The board should also set responsibility and accountability for the framework. Sufficient information should be provided to the management for effective implementation. The risk rating process should be applied to all of the exposures. The number of ratings should be adequate. Risk ratings should be precise and be contemporary in nature. The criteria for risk rating should have clarity and precision and defined based on both quantitative and qualitative factors. In terms of risk representation the ratings should account for both the borrower's anticipated behavior and the nature of the transaction. It should not be static, and be independently validated. The rating assigned to an exposure should be adequately documented. .

2.3.3 Developments in Bank Risk Rating Systems

Numerous banks outside Pakistan are creating strong internal risk rating processes so as to improve the precision and robustness of credit risk management system. This trend is likely to continue as banks employ sophisticated diversification approaches and strengthen the systems to measure economic and regulatory capital to credit risk. Moreover, more compliance is in order for commercial banks that follow the Basel Committee recommended internal-ratings-based approach (Shimko and Went, 2010, p.137-138). Increasingly banks are:

Increasing the number of credit grades they employ; using dual rating systems; using risk rating systems to measure default and loss probabilities; and using models in the rating system.

2.3.4 Automated Scoring Systems

Previously automated systems were only used for consumer loans and corporate bonds. But with the availability of data and the advancement in information technology has come the possibility of using an automated system in the internal rating system. The commercial banks employ these systems to a range of activities in the system. This depends on the type of the automated system and the architecture of the rating system. Whatever is the level of involvement of the automated system the bank has to fulfill the requirements of the guideline and not refer to the vendor's claims as a way of meeting the requirements of the guidelines.

The models employed are characterized as either quantitative or expert systems. A statistical system measures credit risk based on the quantification of factors identified by the vendor as representation of the credit exposure. An expert system, on the other hand, mimics an analyst's style in the credit decision.

Chapter 3 Literature Review

3.2 Benefits of Internal Rating System

Risk rating is beneficial because it allows banks to improve in many dimensions. It requires credit officer to make a credit assessment of an application before it is approved. It allows the department to measure the overall credit risk of the portfolio helping them to know whether or not the bank can tolerate further risk. Then it allows the bank to quantitatively measure the impact of the credit decisions on the overall risk of the bank. Taken together these advantages allow a bank to price its loan more accurately. According to English and Nelson (1998) all banks strengthen their credit risk management frameworks by the employment of internal ratings system.

English and Nelson (1998) Internal risk rating is very common among all banks with larger banks having more complicated systems than the smaller ones. Also, larger banks maintain more risk categories than the smaller banks.

One more benefit is that monitoring activities could be allocated more judiciously. The loans having lower ratings can be monitored more stringently. The widespread application of internal risk rating would provide liquidity to the business loans, ability to the bank to measure loan loss more accurately thus resulting in the overall boost to the economy.

3.3 Quantitative and Qualitative Factors

For the borrowers internal risk ratings, credit grades are generally determined in terms of the assessment employing both quantitative and qualitative factors. Bina Lehmann (2003) is not fully sure whether the additional costs incurred to obtain qualitative information is justified but opined that judgments are very important and add value to the internal rating frameworks. Comptroller's handbook (2001) state that the internal rating process begins with a comprehensive assessment of the obligor's based among other factors on judgmental factors. Substantiating the usefulness of qualitative factors, Bank of Japan (2005) states that in case quantitative factors cannot precisely measure the credit risk, the impact of qualitative factors should be incorporated. Specifically, such an impact should be used to either adjust the credit score or the credit grade. The employment of qualitative factors can also make the whole process very subjective and fraught with inconsistencies. That is why Bank of Japan (2005) suggests that detailed evaluation criteria are necessary for qualitative assessment, which should be as specific as possible and well documented.

Similarly Treacy and Carey (2000) state that the human judgment of experienced staff is very important in the assignment of ratings, so much so that banks maintain the operating design which promote accuracy and consistency of ratings but also do not restrain the judgment.

3.4 Rating Models

Bina Lehmann (2003) is not fully sure whether the additional costs incurred to obtain qualitative information is justified but opined that judgments are very important and add value to the internal rating frameworks. Comptroller's handbook (2001) state that the internal rating process begins with a comprehensive assessment of the obligor's based among other factors on judgmental factors.

3.5 Design of Internal Risk Rating

According to Monica and Monica (2009) the important components of the internal rating system are: a procedure of creating the parameters, well-defined categories, a responsibility structure of the process, physical resources, quantitative models incorporating the qualitative factors, and validation.

Treacy and Carey (2000) state that the important considerations in the design of the system include the responsibility for grading, the reviews of ratings, authority structure, the agency ratings, quantitative models, the formality of the process and rating definitions.

Frerichs and Wahrenburg (2003) state that financial institutes cannot improve system quality if they do not develop rating classes based on the aggregation of credit scores. He further stated that this also results in increase in capital because of the inherent non-linear nature of the capital function.

Pascal Damel (2006) Linked the internal rating framework, development in credit derivatives models, and the development of sophisticated credit risk measurement models.

Kauko stated that the through-the cycle ratings are believed to reduce the procyclicality of the credit risk. But added that their result based on Moody's KMV data on Finnish firms shows negative result as companies did not seem to follow credit risk cycles consistently.

Jacobson, Jesper, Roszbach find that design, other parameters and the implementation are a few controls which effectively allow a bank to account for its credit risk and therefore allow it to operate without additional layer of capital. Their research, though, showed contrasting result. According to Treacy and Carey (2000), design of the rating system are based on the nature of bank loans, relevant cost, staff which uses the ratings and the importance of ratings in the development of desirable type of credit culture.

3.6 External and Internal Rating

Nakamura, Roszbach and Riksbank (2010) report that while assigning ratings information is lost, which implies that it is optimal to combine important information derived from external ratings with the internal credit ratings framework to measure credit risk.

Yueh and Webber (2003) report that as compared to external ratings the internal rating system is more beneficial to a bank as it allows bank to efficiently respond to changes in credit qualities. This is possible because it incorporate private information as well as the judgment of the bank.

Comptroller's handbook (2001) states that external ratings provide one perspective of a customer's credit risk; therefore, the assessor risk rating must be based on his own assessment of the environment facing the customer. The report also adds that if the banks have input from external ratings into their risk rating framework then they must adjust their internal ratings when credit risk changes, whether or not the external ratings have remained unchanged.

3.7 Basel Regulations and Internal Risk Rating System

Mendoza (2005) The IRB approach allows banks' to use internal ratings of their loans to measure credit risk. All exposures are separated into categories using prescribed criteria and descriptions. While effectiveness of IRB approach has been cited by many researchers still there are points of criticism from a number of researchers. Varotto (2008), for example, states that the internal rating based approach (IRB) to measure credit risk under Basel II regulations considers that the portfolio is not concentrated and a single factor describes risk. Their test with a general credit risk model showed that differences in the IRB and the general model were significant.

3.8 Internal Risk Rating Guideliness

Comptroller's handbook (2001) provide the following guidelines to maintain an effective internal risk rating system:

The risk rating system need to gel with the other facets of the credit environment so as to enhance the management decision making capabilities. The role of board is also prescribed; it should not only approve the policy but also set responsibility structure dealing with the internal risk rating framework. Sufficient information should be provided to the management for effective implementation. The risk rating process should be applied to all of the exposures. The number of ratings should be adequate. Risk ratings must be accurate and timely. The criteria for risk rating should have clarity and precision and defined based on both quantitative and qualitative factors. The ratings should be a representation of the risks faced because of the obligor's anticipated performance and the nature of the loan. The system need to be dynamic and independently validated. The rating assigned to an exposure should be adequately documented. .

3.8.1 Scope of Ratings:

The commercial banks in Pakistan are bound by the regulations to credit rate all of type of their banking loans. The ratings for commercial loans, which are the probability of default, should be based on the risk of borrower default.

3.8.2 Rating grades/structure:

The internal risk rating systems of the banks should have an adequate number of risk grades so that concentration of risk grades is not excessive.

The commercial banks should maintain adequate no of risk grades to have a meaningful distribution of risk. The no of credit grades should not be less than nine for loans without default and three for loans which have already defaulted. Rating definitions, procedures and criteria for attributing exposures to the grades must be precisely described. Written rating definitions must be specified clearly to let third parties to understand and mimic rating assignments and perform evaluation of the grades.

All of the banks must establish a methodology that distinguishes meaningfully between the credit worthiness of sequential credit grades. The specifications must be in such details as to ensure consistency in the assignments. This consistency should occur across every relevant dimension of the business. A bank must state in its credit policy the level of risk each risk grade implies. Risk perception must increase with the decline from one grade to the next. The risk of each grade should be described in terms of the probability of default risk and the criteria used to characterize that level of risk

3.8.3 Rating criteria:

5.1 In terms of rating criteria the guidelines prescribe that to assign ratings effectively the banks need to incorporate the impact of all related and significant information. All of the important factors related to the borrower should be addressed. Any factor specific to the financial conditions and managerial domain of this business cannot be ignored. Similarly, all of the important quantitative and qualitative factors should be considered.

The financial condition should be assessed with regard to the level of debts and financial performance such as earnings and levels of cash flows. The management structure should be evaluated based on ownership structure, management quality, willingness and strength of financial position. The qualitative factors should be evaluated based on the nature of CIB report, business sector and industry characteristics.

3.8.4 Rating assignment horizon:

In terms of the rating horizon, the guidelines prescribe one year but recommend a higher period than one year. This is required because the borrower rating should represent the financial conditions that the borrower will face and its willingness to pay over a long-term period. The long-term period would see varying degrees of financial conditions that a borrower is likely to face. The assignments could be subjected to stress testing. The other option could be to incorporate the impact of adverse financial conditions without involving stress testing.

3.8.5 Use of External Ratings:

The guidelines prescribe that with the availability of external credit risk rating the banks need to make sure that all relevant risks have been incorporated in the internal risk rating. In case the external rating is very different from the existing internal rating, an explanation is in order. The guidelines recommend negative adjustment but disallows positive adjustment.

3.8.6 Rating migrations/back testing:

For an effective credit risk management system, it is inevitable to continually monitor the credit worthiness of the obligor and the worth of collateral to determine the actual level of risk. Therefore it is important that borrowers' ratings are reviewed at least annually. Higher risk obligor, needless to say, must have their ratings reviewed more frequently. The bank should have an accurate and quick process to gather and incorporate significant information related to the borrower. Once new information is received, the systems available at the banks must be able to incorporate it with the existing knowledge to arrive at the new rating without much delay.

The guidelines recommend that the risk rating system should be concurrent with a powerful information system so as to effectively facilitate the bank in monitoring actual default rates. It is also prescribed that the banks maintain the relevant credit data to perform validation. Furthermore, it is suggested to banks to maintain a procedure to back-test and recalibrate the assigned ratings.

The banks should maintain a historical data specific to the changes in the assigned ratings and process it into objective information. The banks need to also determine the name of the factors influencing the changes in credit ratings, and use these factors to continue to strengthen the systems. The banks should have historical data related to the ratings. The information such as the date of the original assignment, date of the revision, the staff who were involved in the rating, the methodology employed and the nature of the data used should be part of the records. The commercial banks should also make sure that data related to the defaults is recorded appropriately.

3.8.7 Documentation of rating system design:

Consistency of application is a very important aspect of a rating system. This is attained with adequate level of documentation and the training of the staff involved in rating.

The design and details of the rating system must be documented by the banks. It must also account for the rating systems areas such as authorities of staff, oversight by the management, criteria, diversification and periodicity of reviews. The reasons for the adoption of a particular criteria and analyses practically explaining the criteria should also be documented.

It is also very important that the bank record the historical data related all significant changes made in the rating system. In case the bank uses a quantitative model the documentation should address the functional specifications of the model as well.

3.8.8 Corporate Governance and oversight:

It is the board obligation to approve an internal risk rating policy. The policy could be separate from the credit risk policy, if that is the case, then It should be approved as such. Otherwise the approval of the credit policy would be deemed as the approval of the internal risk rating policy as well. The board should maintain an adequate and consistent level of vigil over the rating system. The policy should be reviewed at regular intervals to determine its relevance with the portfolio and economic conditions. The guidelines prescribe that the regular reporting of bank's portfolio quality should include information about risk ratings. It further suggests the inclusion of analysis of credit grades in terms of segments and portfolios. Further information would be the analysis of historical default rates and migration analysis.

Banks are required to operate credit risk control activities which are accountable for the effectiveness of the internal rating systems. The department must operate independently from other functions such as origination. Furthermore it should test and monitor grades, implement processes to vouch for the consistency of definitions, perform reviewing and record variations. It must also be responsible to supervise and overview the usage of any models employed. Rating assignments and reviews must be done or sanctioned by a party which would not create a conflict of interest. This independence can be accomplished by a number of approaches. The approach adopted by the bank should be documented and made part of the credit policy of the bank.

3.8.9 Reporting Requirements:

The banks have a requirement to possess an internal risk policy fully endorsed by the board and establish fully functional internal risk ratings systems. The criteria to form ratings should be transparent and without ambiguities. The banks are required to report nine grades for non-faulting loans and three grades for default categories to the state bank of Pakistan. The reporting to the directors should include credit grade in terms of portfolios, financial products, geographical locations; the reporting should also include credit migration and actual loss rates.

Chapter 4 Research Methodology

4.2 Sampling Method

There are about 29 commercial banks operating in Pakistan including 6 Islamic banks. Excluding the Islamic banks ten commercial banks were selected based on the convenience of the researcher.

4.3 Research Technique

Interviews of the head of credit risk management were conducted. The unstructured form of interview was used to capitalize on the expert opinions of the head of risk management or head of credit risk management. The questions employed in the interviews were framed based on the contents of the internal risk rating guidelines issued by the state bank of Pakistan in 2008.

The transcription of the interviews was performed. The transcriptions were subjected to content analysis. The information in the transcription was sorted in terms of various aspects of the internal risk ratings such credit grades, rating criteria, rating definition, documentations, internal risk rating policy and relationship with external credit ratings. Then categories were formed for each of the aspects where each category represented a unique piece of information on the individual aspect.

Chapter 5 Data Collection and Analysis

5.1 Introduction

We asked a total number of 20 questions to the head of risk management of 10 commercial banks operating in Pakistan. These open ended questions resulted in diverse responses from the interviewee. We classified these responses into 3 to 5 categories depending on the number of different responses obtained on the question asked. The categories were formed based on the similarity of the responses from the interviewees. As the questions were open-ended each interviewee could have a response featuring in more than one category. For each of the questions a tabular presentation was made that exhibited the response of each of the commercial bank in terms of the categories formed.

An overall analysis of the responses from all of the commercial bank was given for the tabular presentation of each of the question asked. This analysis represented the raw data for the credit risk management practices by commercial banks in Pakistan.

5.2 Content Analysis

5.2.1 Credit culture of the bank.

Category 1 Consistency of practices with risk appetite & credit policy
Category 2 Strong Management at the Top of Credit Function
Category 3 Clear Accountability of Every Personnel Involved
Category 4 Regular training on the credit policy and credit analysis
Category 5 Reward for Vigilance and Penalty for Negligence

Respondent	Category 1	Category 2	Category 3	Category 4	Category 5
1	√	√	√	√	
2					√
3	√	√	√	√	√
4	√				
5	√	√	√	√	√
6					
7l		√			
8	√		√		
9	√	√			
1	√			√	

Based on the content analysis of the elite interviews conducted with the head of credit risk/head of risk management it is found that credit culture among the commercial banks is generally weak. While 70% of the respondents say that credit practices are in line with the credit poly and risk appetite only 50% considered the top management of credit function as being strong. Another alarming aspect of the environment specific to the credit function was poor quality of training provided to the management and staff. When the issue of incentive was discussed only 30% sated that adequate system of reward and penalty was in place to motivate vigilant employees. Similarly only 40% stated that clear accountability framework was in place to hold concerned employees accountable.

5.2.2 Credit Grades

Category 1	The no of grades reflect a meaningful distribution of exposures
Category 2	The no of grades do not cause excessive concentrations
Category 3	The bank has more than 9 grades for non-defaulted borrowers
Category 4	The bank has three grades for defaulted borrowers

Respondent	Category 1	Category 2	Category 3	Category 4	Category 5
1	√	√		√	
2	√	√		√	
3	√	√	√	√	
4	√	√		√	
5	√	√	√	√	
6	√	√		√	
7l	√	√		√	
8	√	√		√	
9	√	√		√	
10	√	√		√	

All of the 10 commercial banks interviewed had credit grades available which did not create excessive concentration of credit risk in the loan portfolio. Also the structure of the grades was so framed in terms of the number and range of grades that created a smooth distribution of risk definitions.

Most of the banks, that is 8 of them, had 9 grades for non-defaulting loans; two had more than 9. For defaulting loans all of the 10 banks had 3 grades.

5.2.3 Rating criteria:

In assignments of ratings the banks take into account the following factors related to the borrowers:

Category 1	Financial condition in terms of debt burden, earnings and cash flows.
Category 2	Management analysis, systems of internal controls, payment performance, and financial condition of the sponsors.
Category 3	CIB report, sector of business and industry analysis

Respondent	Category 1	Category 2	Category 3		
1	√	√	√		
2	√	√	√		
3	√	√	√		
4	√	√	√		
5	√	√	√		
6	√	√	√		
7l	√	√	√		
8	√	√	√		
9	√	√	√		
10	√	√	√		

In terms of the consideration of relevant borrowers' factors the internal risk rating framework maintained by the commercial banks in Pakistan was found effective. All of the ten banks interviewed. The ten banks interviewed had mixed views about the attributes of the borrowers that they assess to assign a rating. All of the banks expressed their complete confidence over the assessment of financial conditions such as the debt burden, earnings potential and the expected levels of cash flows of the business. About the various factors associated with the analysis of the management of the business the bankers had different views. No all of them thought that analysis of management, controls in the business, payment performance and sponsors financial strength were the factors that they always considered. In fact only 50% of the banks were in favor of these factors. About the qualitative factors such as information in the CIB report and industry analysis all of the banks stated that these were important.

5.2.3 Documentation of Internal Risk Rating Framework

Category 1 Portfolio differentiation
Category 2 Rating criteria
Category 3 Responsibilities of parties that rate borrowers
Category 4 Frequency of rating review
Category 5 Management oversight of the process

Respondent	Category 1	Category 2	Category 3	Category 4	Category 5
1	√	√		√	√
2	√	√	√	√	
3	√	√		√	√
4	√		√	√	
5	√	√		√	√
6	√	√		√	
7	√	√		√	
8			√	√	√
9	√	√		√	
10	√	√	√	√	√

The interviewees revealed very important information about the documentation of the internal risk rating process. The discussion revealed issues specific to documentation of portfolio differentiation, rating criteria, responsibilities of the staff, frequency of ratings and management oversight of the process.

Majority of them, that is, 9 out of 10, stated that documentation was adequate in terms of portfolio differentiation. In terms of rating criteria, the interviews revealed that, 8 out of 10 had effectively documented the rating criteria. The documentation for the responsibilities of the staff involved in rating was not so impressive for most of the banks as only 4 out of 10 were found effective in this regard. The frequency of the rating reviews was well recorded by the banks but documentation of the management oversight process had problems. 6 out of 10 banks seemed to have effective documentation the other 4 did not have effective documentation in this respect.

5.2.4 Development of the internal risk rating system? If so, please describe it.

Category 1	Yes, and using to measure credit risk
Category 2	Has recently done so
Category 3	The bank has acquired a vendorised analytic system
Category 4	Finding It Difficult to Implement the Analytic

Respondents	Category 1	Category 2	Category 3	Category 4	
1		√		√	
2			√	√	
3	√			√	
4	√			√	
5	√			√	
6	√			√	
7		√		√	
8	√			√	
9	√			√	
10	√			√	

Existence of Internal risk rating framework is necessary if the banks desire to implement the advanced approach to measuring credit risk. All of the banks have acquired a vendorised system to determine the inputs to measure credit risk. Overall 70% of the banks stated that they had the internal credit rating system to measure all the components of credit risk. 20% stated that they had just been able to establish the internal credit rating system. Only one bank stated that they had recently acquired the vendorised analytic system so they were having some difficulties establishing the internal credit rating system

5.2.5 External credit ratings

Category 1	The available external credit ratings are considered while finalizing the internal ratings.
Category 2	The internal risk rating is not completely aligned with the external rating
Category 3	An explanation is produced when an external rating is quite different from the internal rating
Category 4	In accordance with the movement in external credit rating the internal risk rating is only adjusted downward and not upward

Respondent	Category 1	Category 2	Category 3	Category 4	Category 5
1	√	√	√	√	√
2	√	√	√	√	√
3	√	√	√	√	√
4	√	√	√	√	√
5	√	√	√	√	√
6	√	√	√	√	√
7	√	√	√	√	√
8	√	√	√	√	√
9	√	√	√	√	√
10	√	√	√	√	√

The interviews revealed that all of the 10 banks considered external credit ratings while finalizing the internal ratings. The external considered were considered but not totally aligned with the final outcome of the assignments. The internal rating systems of all of the banks required an explanation if the internal ratings diverged significantly from the external ratings. Also, all of the banks the consideration of external ratings was limited to only revising the internal ratings downward.

5.2.6 Rating Definitions

Category 1	Rating definitions and criteria for assignment of exposures are precisely described
Category 2	Rating definitions allow internal auditors to understand assignment
Category 3	Rating definitions allow third parties to replicate assignments
Category 4	Ratings result in meaningful differentiation of risk

Respondents	Category 2	Category 2	Category 3	Category 4	Category 5
1	√	√	√	√	√
2	√	√		√	√
3	√	√	√		√
4	√	√		√	√
5	√	√	√		√
6	√	√		√	√
7	√	√	√	√	√
8	√	√	√		√
9	√	√			√
10	√	√	√		√

The interviews with the head of risk management revealed that all of the banks clearly had clarity in the definitions of rating grades and the criteria for assigning these was also clearly defined. In terms of the replication of the ratings by internal auditors only 6 banks out of 10 were found to have this attribute. The replication of the ratings by third parties had the similar response from the banks, only 5 out 10 banks were found to maintain clarity to that level. Lastly, all of the banks were found to have meaningful definitions of rating to achieve differentiation of the credit risk.

5.2.7 Internal Risk Rating Reporting

Category 1 The reporting to the board include rating information
Category 2 Reporting of credit rating information is broken down by grades.
Category 3 Reporting includes analysis of realized default rates
Category 4 Reporting includes trend and migration analysis
Category 5 Reporting include information on segment breakdown by credit grade

Respondents	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
1	√	√		√	√	
2	√	√			√	√
3	√	√	√		√	√
4	√	√		√	√	
5	√	√	√		√	√
6	√	√		√	√	√
7	√	√	√		√	
8	√	√			√	
9	√	√		√	√	√
10	√	√	√	√	√	

The internal risk rating reporting practices among commercial banks were found to be varying to a certain extent.

All of the banks interviewed stated that the periodical reporting to the boards included rating information. Also, all of the banks stated that the information was broken down in terms of credit grades. This was contrasted by the fact that only 40% of the banks sated that the information included realized default rates. In terms of the reporting of trend and migration analysis only 50% of the banks sated that they did so.

The frequency of the reporting was also another area where divergence of practice was found. 50% of the bank stated they were reporting credit information quarterly, that is, for each meeting quarterly meeting of the directors. The remaining banks sated that they were reporting the information annually.

5.2.8 Board Involvement in the System

Category 1 Board of directors approves the internal risk rating policy.
Category 2 Top management approves the internal risk rating policy
Category 3 Internal risk rating policy is approved as part of credit policy
Category 4 Internal risk rating policy is approved separately
Category 5 Board set the responsibility structure

Respondent	Category 1	Category 2	Category 3	Category 4	Category 5
1	√		√		√
2	√		√		√
3	√			√	√
4	√		√		√
5	√		√		√
6	√		√		√
7	√		√		√
8	√		√		√
9	√			√	√
10	√		√		√

All of the banks interviewed stated that they had internal risk rating policy sanctioned through the board of directors. Out of the 10 banks interviewed 8 said that they had the policy approved as part of the overall credit policy. The remaining 2 banks stated that the internal credit risk rating policy was separately sanctioned by the directors.

In terms of the board's involvement in the setting of the responsibility structure all ten banks were found to experience the requisite role of the board.

5.2.9 Internal risk rating framework linkages to the systems of the Banks.

Category 1	Portfolio monitoring,
Category 2	Analysis of loan loss reserves
Category 3	Loan pricing
Category 4	Capital allocation and analysis of return
Category 5	A single rating system for lending, risk measurement and allocation

Respondent	Category 1	Category 2	Category 3	Category 4	Category 5
1	√	√	√	√	√
2	√	√	√	√	√
3	√	√	√	√	√
4	√	√	√	√	√
5	√	√	√	√	√
6	√	√	√	√	√
7	√	√	√	√	√
8	√	√	√	√	√
9	√	√	√	√	√
10	√	√	√	√	√

All of the banks interviewed disclosed that they were using internal risk rating system for numerous purposes. They were found to use it for portfolio monitoring, loan loss provisioning, loans pricing and capital planning.

This implied strong that the banks did not have separate systems of credit ratings for various credit risk management activities.

5.2.10 Internal Risk Rating Methodology

Category 1	Methodology is based on size, nature of operations and clientele base.
Category 2	Methodology is flexible and accommodates current and prospective risks
Category 3	Methodology accommodates estimated degree of diversification
Category 4	Methodology accommodates complexity of lending transactions
Category 5	Methodology provides effective information for credit risk management

Respondent	Category 1	Category 2	Category 3	Category 4	Category 5
1	√		√	√	√
2	√		√	√	√
3	√	√	√	√	√
4	√	√	√	√	√
5	√	√	√	√	√
6	√	√	√	√	√
7	√		√	√	
8	√	√	√	√	√
9	√		√	√	
10	√	√	√	√	√

All of the banks interviewed have been found to maintain a structure methodology to assign ratings to obligors. All of the banks were found to have methodologies which were based on the size and nature of operations as well as the clientele base. In terms of risks, 60% of the banks were perceived to have methodologies that were found to be flexible enough to accommodate both current and prospective risks. 40% of the banks were found to be lacking a methodology that could accommodate both current and prospective risks. The aspect of anticipated diversification was also accommodated by the banks, as all of the banks were perceived to do this. It was also found that the methodology were in line with the sophistication of the commercial lending activities.

The banks were believed to maintain methodologies which were also producing information that was adequate and sufficient for the maintenance of an effective system of credit risk management.

5.2.11 Use of quantitative and qualitative factors

Category 1	Quantitative factors
Category 2	Qualitative factors
Category 3	Both Quantitative and qualitative factors
Category 4	Relies heavily on quantitative factors
Category 5	Relies heavily on qualitative factors

Respondent	Category 1	Category 2	Category 3	Category 4	Category 5
1	√	√	√		√
2	√	√	√		
3	√	√	√		
4	√	√	√	√	
5	√	√	√		
6	√	√	√		√
7	√	√	√		
8	√	√	√	√	
9	√	√	√		
10	√	√	√		√

All of the banks interviewed stated that they used both quantitative and qualitative factors to assign credit ratings.

Two of the banks were found to rely heavily on quantitative factors whereas three were found that rely heavily on qualitative factors. According to those relying heavily on qualitative factors judgment of the underlying situation facing the employer was more important than the quantitative measure of the credit score.

Chapter 6 Findings

6.1 Introduction

We interviewed head of risk management of 10 commercial banks in Pakistan and used the technique of content analysis to obtain desired information. The information we obtained is presented below under the headings of credit culture, credit review, limit setting, problem credits, credit reporting, credit approval, stress testing, monitoring, pricing credits, collateral policy and credit risk modeling.

6.2 Credit Grades

The internal risk rating framework maintained by the commercial banks in Pakistan is effective in terms of the nature of credit grades maintained within the framework. The banks have right number of grades which does not create credit risk concentration and provide a functional distribution of risks. No of credit grades required by the SBP guidelines is 9 for non-defaulting and 3 for defaulting loans, all of the banks in Pakistan has at least this no of grades.

6.3 Use of quantitative and qualitative factors

Another important aspect of internal risk rating framework is the use of quantitative and qualitative factors in assessing the credit risk of the borrower. The SBP guidelines suggest a mixture of the factors which would appropriate given the financial economic condition faced by the borrower. The banks in Pakistan are found to have a mix of qualitative and quantitative factors to suggest a full compliance with the internal risk rating guidelines.

6.4 Internal Risk Rating Methodology

The commercial banks in Pakistan were found to have not so robust methodologies employed in their risk rating framework. The methodologies were found to be adequate in terms of the size and nature of lending activities. But what they lacked in was flexibility to accommodate future risks profile and anticipated diversification. The methodologies, however, were found to be sophisticated enough to perform under modern lending environment.

6.5 Documentation

The commercial banks in Pakistan were found to have weaker documentation environment to cater to different activities in the internal risk rating system. Although the documentation was adequate in terms of portfolio differentiation and not so bad for rating criteria, it did not do well in terms of other aspects of internal risk rating framework. The documentation for the responsibilities of the staff and the management oversight process were found weak.

6.6 Internal Risk Rating Policy

All of the banks interviewed were found to have good internal risk rating policy practices in terms of its approval and revisions. They banks were found to have the policy approved from the board of directors - a good practice in terms of the SBP guidelines. The revisions were made by the bank annually or whenever the economic or financial circumstances demanded so; again a good practice in terms of the guidelines.

6.7 External Credit Ratings

The interviews revealed that all of the commercials considered external credit ratings before finalizing the internal ratings. Although this was done but total alignments between the two types of the credit ratings was not sought by all of the commercial banks. The internal risk rating framework of all of the banks required an explanation if the internal ratings diverged significantly from the external credit ratings. Also, for all of the banks the consideration of external ratings was limited to only revising the internal ratings downward.

6.8 Rating Definitions

The interviews with the head of risk management revealed that all of the banks had clarity in the definitions of rating grades and in the criteria for assigning the internal risk ratings. In terms of the replication of the ratings by internal auditors only 6 banks out of 10 were found to have this attribute. The replication of the ratings by third parties had the similar response from the banks, only 5 out 10 banks were found to maintain clarity to that level. Lastly, all of the banks were found to have meaningful definitions of rating to achieve differentiation of the credit risk.

6.9 Rating Criteria

The ten banks interviewed had mixed views about the attributes of the borrowers that they assess to assign a rating. All of the banks expressed their complete confidence over the assessment of financial conditions such as the debt burden, earnings potential and the expected levels of cash flows of the business. About the various factors associated with the analysis of the management of the business the bankers had different views. No all of them thought that analysis of management, controls in the business, payment performance and sponsors financial strength were the factors that they always considered. In fact only 50% of the banks were in favor of these factors. About the qualitative factors such as information in the CIB report and industry analysis all of the banks stated that these were important.

Chapter 7 Conclusion

Credit risk comes from the expectation about borrower's perceived inability and unwillingness to pay. So a financial institute is a unique seller as it has to select and monitor its customers unlike other types of businesses. The deficiency in the selection process or the monitoring process can be disastrous for the financial institute even when the financial product is in great demand.

Commercial banks are inherently exposed to this risk, and only an effective credit risk management system can protect them from undesirable losses. This is particularly important for a country like Pakistan where commercial banks are limited by the lack of good governance, constraint of physical and human resources.

The literature on internal risk rating system practices employed by commercial banks is not very comprehensive and rich. The most popular aspect of internal risk rating systems among the researchers has been quantitative and qualitative factors, rating models, design of the internal rating systems and external and internal ratings. According to the researchers to operate effectively the internal risk rating systems need to attend to to these aspects.

The internal risk ratings guideliness were issued by SBP in 2008. The contents of the guideliness, that is, risk rating principles and the requirement imposed by the SBP were used as the basis for evaluating the quality of risk rating practices employed by the cmmercial banks in pakistan.

In this study we attempted to find out the quality of internal risk rating systems prevalent with the commercial banks in Pakistan. To achieve this objective interviews of head of risk manageent of 10 commercial banks operating in Paistan were conducted. The unstructured questions used in the interviews were developed in accordance with the key attributes of the internal risk rating guideliness issued by the state bank of Pakistan. The interviewd were transcribed and the technique of content nalysis was used to obatin common patterns in the responses. The findings revealed that internal risk rating systems of commercial banks in Pakistan are generally strong but need improvement in a few aspects. The following areas of internal risk rating systems of commercial banks in Pakistan were found weak:

- Environment specific to internal risk rating methodologies employed by the banks.

- Environment specific to the documentation in the internal risk rating system.

Other areas such as credit grades, use of qualitative and quantitative factors, methodology, internal risk rating policy, external credit rating, rating definitions, rating criteria, boards involvement were found in lines with the internal risk rating guidelines issued by the SBP. Therefore these aspects of internal risk rating systems at commercial banks in Pakistan could be considered strong.

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